CLAIMS:

I claim:

1. A method of measuring acceleration of an engine comprising the steps of:

selecting an engine test stand having a base having an inertia shaft mounted thereto and coupled to a gear box, said engine test stand also having an engine cart for mounting an engine thereto and positionable for coupling said engine to said gearbox, said inertia shaft having selectively engaging weights attached thereto;

mounting an engine to said engine cart;

positioning said engine cart for alignment of an said engine with said gear box;

coupling said engine to said gear box;

starting said engine;

accelerating said mounted engine through a predetermined RPM range; and

measuring elapsed times at preselected RPMs; whereby acceleration of an engine can be recorded under selected loads to simulate race track lengths.

2. Apparatus for measuring acceleration of an engine comprising:

a base;

an inertia shaft rotatably mounted to said base;

a gear box attached to said base and coupled to said inertia shaft;

an engine mounting cart, having means for removably attaching an engine thereto;

a plurality of weights selectively engageable to said inertia shaft for rotation therewith; and

at least one sensor mounted for reading the rotation of said inertia shaft so that elapsed times can be measured at preselected RPM points during acceleration of an engine; whereby acceleration of an engine can be recorded under selected loads to simulate race track lengths.

3. The apparatus for measuring acceleration of an engine in accordance with claim 2 in which said plurality of weights includes at least one floating weight mounted on bearings on said shaft.

4. The apparatus for measuring acceleration of an engine in accordance with claim 3 in which each of said plurality of weights has a generally cylindrical shape.

5. The apparatus for measuring acceleration of an engine in accordance with claim 2 having a plurality of sensors mounted for reading the rotation of said inertia shaft.

6. The apparatus for measuring acceleration of an engine in accordance with claim 5 having a plurality of permanent magnets attached to said inertia shaft.

7. The apparatus for measuring acceleration of an engine in accordance with claim 2 in which said engine cart has a plurality of wheels for rolling said cart and mounted engine into place for coupling to said gear box.

8. The apparatus for measuring acceleration of an engine in accordance with claim 7 in which said engine cart has means for attaching said cart to said base.

9. The apparatus for measuring acceleration of an engine in accordance with claim 6 in which one of said plurality of sensors is mounted for reading the RPMs of said engine crankshaft.

10. The apparatus for measuring acceleration of an engine in accordance with claim 9 in which one of said plurality of sensors is mounted for reading the RPMs of said engine crankshaft.

11. The apparatus for measuring acceleration of an engine in accordance with claim 10 in which one of said plurality of sensors is mounted for reading the RPMs of said gear box output.